‘BLENDED HYBRIDISATION’ MODELS OF PROFESSIONAL MANAGEMENT AND THEIR IMPACT ON PERFORMANCE: THE CASE OF PUBLIC HEALTH DOCTORS IN THE ITALIAN SSN

ABSTRACT

Empirical research has increasingly associated the presence of hybrid professional managers with improvements in the performance of public sector organisations. However, hybrids have been generally treated as an undifferentiated category, without considering the range of career backgrounds of professionals who enter management roles. This study focuses on the illustrative case of the Italian healthcare sector, which has witnessed the early development of a sub-specialisation of medical managers drawn from the public health specialty. This ‘blended’ model of hybridisation has seen the emergence of a specific career pathway linked to a distinct postgraduate specialisation in medical schools, including training in hospital management. Variations in the influence of specialised medical manager, medical and non-medical CEOs backgrounds on performance outcomes of public hospitals are found. Specifically, while deeper and earlier forms of engagement with management (of blended hybrids) are having a distinct impact, it is less dramatic or transformational than might be assumed.

INTRODUCTION

A drive to co-opt professionals, such as doctors, nurses and teachers into the management of services, has been a recurring feature of NPM reforms around the world (Dent et al. 2016; Numerato et al. 2012). This has led to the creation of new part time or ‘hybrid’ professional manager roles, such as clinical directors or heads of department with responsibility for

budgets. In many areas, professionals have also been drawn into more ‘strategic’ roles, sitting on the boards of public organisations (such as foundation trusts in the UK) or even as chief executive officers (Sarto & Veronesi 2016; Goodall 2011).

While much attention has focused on the changing identities and practices of these hybrid managers (Noordegraaf & Van Der Meulen 2008), a growing strand of work has also begun to explore their impact on performance (Goodall 2011; Goodall 2009; Sarto & Veronesi 2016). In health, for example, it is suggested that ‘doctors involved in boards of directors bring a unique set of skills to the business of medicine’ (Falcone & Satiani 2008, p.88), drawing on their credibility, sector specific expertise and professional networks to enhance decision-making around patient quality (Veronesi et al. 2015; Witman et al. 2010). But, while there is a growing body of evidence to support these conclusions, questions remain about how far and why hybrid professional managers are having these effects. There has also been a tendency to treat hybrid professional managers as a relatively undifferentiated category, essentially viewing them as professionals who switch in mid (or usually late) career into management roles.

However, this depiction of hybrids may not fully account for the range of experiences and career backgrounds of professionals who become managers. In some contexts, the process of developing management competencies and identities occurs at a far earlier stage in professional careers and may even be integral to professional formation from the outset (Noordegraaf 2011). In health, for example, there has been a trend to restructure medical training programmes to include management and leadership topics within the core curricula (Hartley, 2016). In some countries, including the US, Australia, Israel and Italy, this has also gone hand in hand with moves to develop a specific medical management specialisation (Busari et al. 2011).

These variations in the *types* of hybrid raise questions about the orientations and skills of professional managers and, consequently, about their likely contribution to performance. On the one hand, it might be argued that professionals who engage with management at an earlier career stage will have a greater impact than those (classic) hybrids who later (sometimes reluctantly) convert into management. This expectation has been central to the whole rationale for investing in the management and leadership development of professionals (O’Reilly & Reed 2010). However, assumptions about the likely contribution of different types of hybrid professional manager remain untested and fail to acknowledge potential risks and obstacles to the enactment of these roles. While the formation of management skills and identities at an earlier stage may be an asset for hybrid professionals, could it also be at the expense of their and credibility and standing amongst colleagues (Exworthy & Halford 1999)? If so, what impact might this have on their ability to influence decisions and contribute to performance?

In this paper, we address these questions focusing on the Italian health sector as an illustrative case. Italy is theoretically interesting because – unlike many other advanced health systems - it witnessed the early development of a sub-specialisation of medical (professional) managers drawn from the public health speciality. Since the 1950s, public health doctors (also called hygienists - *igienisti*) have engaged in an explicit ‘occupational mobility project’ (Larson 1977) aimed at capturing the jurisdiction of public hospital management. This has led to the emergence of a specific career pathway linked to a distinct postgraduate specialisation in medical schools, including training in hospital leadership and management (Sartirana et al. 2014). In what follows, we first review the general literature on professional manager roles to develop the notion of blended hybrids and their possible impact. We, then, focus on the Italian case, drawing on routine administrative date to explore this issue empirically.

DIFFERENTIATING BETWEEN PROFESSIONAL MANAGERIAL HYBRIDS

In recent years, the notion of a hybrid has been used extensively to describe change in public services at multiple levels of analysis: individual, organisational and institutional (Denis et al. 2015). Essentially, it refers to a mixing of practices, values or logics that are in tension but which are also relatively stable over time. Hence, in the context of professional manager roles hybridisation implies a ‘recombination and blurring of distinct professional and organisational modes of working’ (Waring 2014, p.689) in ways that are not just transitory.

As we noted, considerable attention has focused on these hybrid professional manager roles in relation to identity struggles of socialised professionals who enter into management or leadership activities (Croft et al. 2015). There has also been considerable interest in the practices of hybrids and the extent to which they buffer professional activities from outside interference (Waring & Currie 2009), or enhance management control in areas of practice that are ‘hard to reach’ (Martin & Learmonth 2012).

However, for our purposes, a more important insight to emerge from this work is the observation that professional manager hybrids are not an undifferentiated category (Noordegraaf 2015). The way hybrids develop may depend on the amount of *time* professionals devote to management, with more strategic roles usually absorbing more (or full) time (Exworthy & Halford 1999). The professional and organisational context will also be important. While in in some professions – for instance, teaching, nursing and social work – career advancement has historically meant greater engagement with administrative (or management) roles, this has been less true for others (notably medicine and academia) where separate – administrative and professional – career ladders are more common (Ackyroyd et al., 2007).

A related distinction concerns the *extent* to which ‘management components’ have been integrated into the earlier career development of professional hybrids. Useful for understanding this point is the continuum proposed by Skelcher and Smith (2015) based on the extent to which hybrids (organisations or individuals) combine different ‘institutional logics’. At one end of the spectrum are ‘blocked hybrids’ where individuals or organisations are unable to resolve contradictions in their roles. Beyond this, various ways of accommodating pluralism exist, including the compartmentalisation of multiple logics, partial assimilation and full integration or blending. The latter involves ‘synergistic incorporation of elements of existing logics into a new and contextually specific logic’ (p. 440), leading to an entirely ‘new singular identity’ (p. 442).

This idea of a continuum of hybrid forms has also been applied to the professions (Numerato et al. 2012). Noordegraaf (2011; 2015), for example, highlights the way in which professional and managerial (or organisational) imperatives are being combined in new and previously unforeseen ways. This has implications for the values and practices of professionals, with an emerging category of ‘*organising* professions’ where there is an “organising *of* and *in* professional practices…” (Noordegraaf 2015, p.21). In this more ‘connective’ form of professionalism, geared towards collaborating with key stakeholders (users, other professions, etc.) and the ability to reconcile competing demands, ‘quality and efficiency *both* belong to professional work’ rather than being the usual trade-off associated with hybrids (p. 23-24). Thus, in the more blended form of hybrid ‘the coming together of professional and organisational elements is no longer “unwanted” – organising is part of the job’ (p. 24).

For Noordegraaf and others, the emergence of these more blended hybrids is not accidental, but is increasingly linked to changes in professional selection, formal education and socialisation. Trends in the integration of management training and organisational

competencies at earlier stages of professional careers direction are apparent across many countries with attempts to reform both undergraduate and postgraduate medical education. For example, the Canadian model of medical education (CanMEDS) (www.rcps.medical.org/canmeds) and the UK ‘Medical Leadership Competency Framework’ (www.leadershipacademy.nhs.uk) emphasise the importance of management and leadership in training, from undergraduate stage onwards (Ham et al. 2011; Noordegraaf 2011).

A related trend, especially pronounced in the health sector (Busari et al. 2011), is the emergence of new types of specialist ‘organisational professions’ (Reed 1996), in which professional and management competencies and identities are merged from the outset. In Australia and New Zealand, for instance, a medical specialty of *medical administration* is a postgraduate specialist branch of medicine that is promoted by the Royal Australasian College of Medical Administrators in order to prepare doctors for careers in medical management (MacCarrick 2014). In the US, attempts to build medical management sub-specialisms – through joint degrees such as MD/MBA - are also long standing (Larson et al. 2003).

CONSEQUENCES FOR PERFORMANCE

Returning to the main concerns of this paper, what implications, if any, do these distinctions between *types* of hybrid professional manager have for performance outcomes? As we saw, there is evidence that professional involvement as CEOs or as members of the governing boards of public organisations – such as hospitals or universities - can have an impact on performance (Goodall 2009; Veronesi et al. 2015). But is this likely to be more or less true in situations where professionals have undergone a more intensive form of education and socialisation, as implied by the notion of a blended hybrid? In what follows we consider this question in more detail, drawing on Appelbaum’s (2000) AMO model as a loose framework

to consider the possible impact of blended hybrids in terms of their *ability*, *motivation* and *opportunity* to contribute.

First, it might be argued that professionals who have undergone an earlier and more complete training and socialisation in management will have an enhanced *ability* to contribute towards strategic decision-making. According to Kippist & Fitzgerald (2009), one of the strongest ‘barriers to the effectiveness of the role of hybrid clinician manager’ is ‘the lack of management education and skill’ (p. 647). This, however, should be less of a problem for blended hybrids who are more likely to have internalised this knowledge. Kurunmäki (2004, p.336), for example, notes how in Finland integration of management training for doctors at an early career stage meant that ‘calculative expertise’, associated with the financial dimensions of care, had become a ‘legitimate competency’. Such experience may increase the ‘informational advantages’ of blended hybrids and ensure that they are more adept at dealing with and ‘cost-quality trade-offs’ (Weiner et al. 1997).

A related argument concerns the *motivation* of blended hybrids. The wider literature on professional managers frequently highlights the tensions associated with such roles and the variable levels of engagement to them (Waring 2014). McGivern et al. (2015), for example, distinguish between ‘incidental hybrids’, oriented towards representing and protecting institutionalised professionalism, and ‘willing hybrids’, who have more developed, stronger professional management identities. Arguably, ‘blended’ hybrids will be closer to the latter (willing) end of this continuum, having self-selected into management careers and being more deeply socialised into them.

Lastly, it is possible that blended hybrids may have greater *opportunity* to influence decision making. In part this is due to the nature of their careers, with more time devoted to acquiring organisation political capital through their involvement with wider networks of managers

within and beyond their own organisations (Exworthy & Halford 1999). This fact could also mean that blended hybrids establish stronger communication channels with other (non-professional) managers, allowing them to increase the breadth of knowledge available in strategic decisions and assisting with implementation.

Conversely, there are reasons to question the view that blended hybrids will *necessarily* make a stronger contribution to performance than other professionals who have been less immersed in management. First, there is a question regarding their ability. As we have seen, one explanation given for the impact that professionals often have on strategic level decision making is their deep, ‘sector specific’ knowledge (Ford-Eickhoff et al. 2011). To some extent, this also applies to blended hybrids, although it is possible that their (inevitably) more generalist training and longer time spent detached from operational concerns (by performing management roles) will make them less involved or insightful.

In a similar way, one might question how far the (likely) stronger motivation of blended hybrids to engage with management concerns will always be beneficial. While this may help to strike a productive balance between professional and management concerns, there is also a risk that their partial separation from professional identities will be counter-productive. The latter supposition is implied by social identity theories of leadership (Haslem and Van Dick 2011), which emphasise the need for (effective) leaders to identify most strongly with their own social group, in effect, to be *protypical* of their group. These demands may be especially acute in professional settings, such as health, where there is also a greater emphasis on ‘distributed’ or ‘shared’ models of leadership (Croft et al. 2015) and where being perceived as having dual commitments may be dis-advantageous.

Lastly, there are questions about how far the opportunity of blended hybrids to contribute to performance will be greater than for other professionals. While access to management

networks will help, blended hybrids may be less able to influence hearts and minds of rank and file practitioners within their own organisations. Beyond the points made earlier about the liability of their stronger management motivations, this may follow from the position that blended hybrids occupy within the status and prestige hierarchy of the professions (Zhou 2005, p.92). Medicine, in particular, is characterised by a rigid status hierarchy linked to educational background and specialisation (Battilana 2011) with marked implications for access to resources and opportunities (Norredam & Album 2007). The risk for hybrid professionals who have associated themselves more closely with management is that they will likely be typecast as ‘lower status’ occupations within this status order, thus limiting their credibility and influence.

Hence, there is some ambiguity in the literature concerning the likely impact of professionals who have specialised in management or incorporated elements of management training and socialisation earlier in their careers – so called blended hybrids. While, on the one hand, it can be argued that they have greater ability, motivation and opportunity to contribute to performance (than other professionals who have been less immersed in management), there are also reasons to question this view. In what follows, we explore this issue in more detail focusing on the illustrative case of the Italian national health service – the *Servizio Sanitario Nazionale* (SSN).

THE DEVELOPMENT OF A ‘BLENDED HYBRIDISATION’ MODEL OF PROFESSIONAL MANAGERS IN ITALY

As noted earlier, Italy has been historically characterized by the presence of a ‘blended hybridisation’ model of professional managers, linked to public health (PH). Unlike most other countries, in Italy, from the early twentieth century, doctors specialised in PH

(‘*igienisti’*) became prominent as medical directors in hospitals and, in the post war era, also sought to extend their jurisdiction into management through new forms of training and specialisation. In what follows, we present a short history of this unique, ‘third way’, occupational mobility project and how management became integrated into the training and socialisation of PH doctors (see Table 1 for a chronology of key milestones in this history).

TABLE 1 ABOUT HERE

As can be seen in Table 1, the origins of the PH discipline in Italy date back to the eighteenth century, being heavily influenced by the ideas of Johann Peter Franck on the need for medicine to concern itself with the wider organisation of services (Pelissero 2007). In the first half of the twentieth century, although primarily interested in the prevention of infectious diseases, PH doctors began to assume relevant roles in healthcare organisations by occupying public servant positions (Sartirana et al. 2014). This colonisation of administrative roles was given a boost in 1938 when the Petragnani Law (*Legge Petragnani*, RD 1631/1938) restructured the hospital sector and established the new role of hospital medical director (i.e. *Direttore Sanitario*). Importantly, and possibly unique to Italy, this law insisted that, in order to compete for these positions, doctors should have specific qualifications in the field of hygiene, technology and hospital care (Pelissero 2007; Sartirana et al. 2014). This fact placed PH doctors in an advantageous position, allowing them to dominate the new positions of medical director.

In 1968, this governance role of PH doctors was further strengthened by the Mariotti Law (*Legge Mariotti*, 132/1968), which emphasised the ‘managerial’ tasks of medical directors. As a result, PH doctors extended their involvement into a wider range of human resource and

financial management activities. At the same time, Italian faculties of medicine also started to establish post-graduate specialist training (*Specializzazione*) in PH and hygiene. Unlike other clinical specialisations, this training was more inclusively focused on improving health services in terms of organisation and delivery of safe, high-quality services. Increasingly, the curriculum of PH doctors was dominated by managerial logics (Nante et al. 2013), the demand for which was further increased by the establishment of the SSN in 1978 (Pelissero 2007). After 1978, PH doctors took on managerial responsibilities for the provision of healthcare at the local level by working in conjunction with local authorities.

In the 1990s, the advent of new public management (NPM) reforms in Italy (Lega 2008) re-affirmed the prominent role of PH doctors in high level management and administration. A key reform in 1992 saw the creation of semi-independent, corporatized, organisations - *Aziende Sanitarie Locali* (Local Health Organizations) and *Aziende Ospedaliere* (Hospital Trusts) - with new roles established at the strategic apex of hospitals: general director (*Direttore Generale*) and medical director (Sartirana et al. 2014). It was declared that the specialisation of clinicians in PH was a *preferred* qualification for these senior roles (D.lgs. 502/1992, D.lgs. 517/1999 DPR 10/12/1997 n. 484). To support this, in 1995 a uniform curriculum for PH doctors was established, with particular emphasis on organisational competence and managerial skills (e.g. human resource management, management of processes, planning and evaluation) (Romano et al. 2014).

In more recent times, Italian PH doctors have gone on to further deepen their association with management. A Ministerial Decree in 2005 required a greater inclusion of health economics, management and organisation topics in the PH curriculum (Garavelli et al. 2014) and promoted on the job training through extra-university internships within the offices of medical or general directors in the new organizations.

By 2014, the number of courses delivering this PH specialisation had reached 38, with approximately 200 enrolled each year (Romano et al., 2014). A significant proportion of these students have the aspiration to move into senior management positions. Based on a sample of 149 doctors attending PH courses, Gimigliano et al. (2009) report that more than the 40% planned to work within the Health Director office, while the 32% of postgraduate students expressed an interest in the Medical Director office. This interest in management is reflected by the fact that, in Italy, PH doctors make up over 50 per cent of all CEOs with a medical background (Sartirana et al. 2014). It has also been reinforced by the establishment of a dedicated professional association: *Società Italiana di Medici-Manager* (Italian Society of Medical Managers).

Hence, this brief history reveals the emergence of a highly specialised pathway of medical management in the Italian health context, linked to the public health profession. However, while this blended hybridisation model, characterised by the development of management competencies and identities at a much earlier careers stage, is often viewed as advantageous for improving the quality and outcomes of hospital governance in Italy, the impact that these PH doctors actually have on performance remains unclear.

DATA AND METHODOLOGY

Sample and data

To explore the performance implications of Italy's blended hybridisation model, we focus on PH doctors occupying the position of *Direttore Generale* (i.e. the CEO) within Italian public hospitals. The latter comprise general hospitals (*Aziende Ospedaliere* - AOs), teaching hospitals (*Aziende Ospedaliero-Universitarie* – AOUs) and research hospitals (*Istituti di*

Ricovero e Cura a Carattere Speciale – IRCCSs). Specifically, we focus on *two* broad questions. First, does the presence of PH doctors, as CEO’s of public hospitals, have a positive impact on performance, in terms of efficiency and quality outcomes? Second, how does this impact compare with CEOs with other kinds of human capital, such as medical doctors from other specialities and non-clinical managers?

Due to the lack of a central repository of information on the Italian SSN hospital governance, we constructed a unique dataset by manually working through the official documentation published by the Italian Ministry of Health, the Regions and any other relevant information accessible on each hospital website. The personal information on hospital CEOs and their area of expertise was retrieved from their curriculum vitae, their appointment decrees and the official register of Italian doctors. Data on hospital non-financial performance was taken from the ‘Hospital Discharge Cards’ (*Schede di Dimissione Ospedaliera* - SDOs) database published by the Italian National Health Department on its website. Lastly, information relating to hospital financial performance was gathered from the publicly available hospital annual reports and accounts.

The total population of public hospitals in the Ministry of Health database amounted to 105 organisations censored in 2011. This was the last available information at the time of the research. Some organisations had to be excluded as mergers, de-mergers and changes in ownership status occurred during the period under investigation. The remaining missing hospitals were not included in the study due to the absence of reliable information on their top executive position. As a result, the final sample comprised of 90 hospitals in 2008, 92 hospitals in 2009 and 96 hospitals in 2010. All PH doctors included in our sample had qualified after the 1995 reform, which meant they had undertaken the more standardised form of management education described earlier.

Dependent variables

The dependent variable of the empirical model is the hospital performance measured in relation to both the quality of the service provided and financial efficiency.

Service Quality

To measure the non-financial performance we employed process indicators relating to the delivery of care. These indicators have been developed by the performance evaluation system elaborated by the ‘Scuola Superiore Sant'Anna’ of Pisa (Nuti et al. 2012) and have been used in prior research focused on the Italian SSN. Specifically, we measured the quality of hospital services through *two* dimensions: the efficiency of care and appropriateness.

The *efficiency of care* was captured using two indicators: the ‘pre-surgery length of stay’, and the ‘length of stay’. The ‘pre-surgery length of stay’ includes the average number of days between admission date and the date when surgery is performed on the patient. The ‘length of stay’ represents the average number of days between admission date and final discharge of the patient. Essentially, both indicators measure the hospital ability to efficiently plan the use of its resources and effectively organise its activities.

Using principal component factor analysis, we dichotomised the length of stay variable at its median value (LOS) (DeCoster et al. 2009). As the value of the (pre-surgery and ordinary) length of stay factor was inversely proportional to the efficiency of care dimension (i.e. a higher composite value equals lower efficiency), the dummy variable assumes value 1 (better performance) if the factor value is lower than the median, meaning that the composite length of stay for each hospital is lower than the one of the hospital population in our sample.

Second, the *appropriateness of care* dimension was determined on the basis of medical and surgical appropriateness. These measures gauge the hospital ability to perform clinically appropriate interventions for (medical and surgical) patients (Nuti et al. 2012). Medical

appropriateness was measured using two ratios: (i) the ratio between the number of short (0-2 days) medical hospitalisations and the total number of medical hospitalisations; and (ii) the ratio between the number of hospital medical hospitalisations with diagnostic aim and the total number of medical hospitalisations. Surgical appropriateness, on the other hand, was measured using the ratio between the number of hospitalisations with medical diagnostic related groups (DRGs) discharged from surgical departments and the total number of patients discharged from surgical department.

As with the efficiency of care measure, we used principal component factor analysis to identify a factor that comprised all three appropriateness indicators. Given the presence of outliers and non-linearity of relationship between input and outcome variables, we dichotomised the appropriateness variable (APPROP) at the median value (DeCoster et al. 2009). As the value of the appropriateness factor was inversely proportional to the appropriateness performance dimension (i.e. a higher composite value equals lower appropriateness of care), the dummy variable assumes value 1 if the factor value is lower than the median. Therefore, a dummy equal to 1 measures better performance in terms of surgical and medical appropriateness.

Financial performance

To measure hospital financial performance, we used two accounting indicators: the net operating margin ratio (OP_MARG_RAT), which is a measure of the profit generated by the organisation; and the ratio of total expenses on hospital beds (OP_EFF), which represents a measure of hospital financial efficiency. The OP_MARG_RAT indicator is positively related to the profit dimension and so an increase in the OP_MARG_RAT variable indicates an improvement in terms of the profit generated. On the other hand, the raw value of OP_EFF is inversely related to the costs structure of the hospital operations, meaning that when the

relative (to the number of beds) costs are higher the hospital is less efficient. Thus, to make it more immediately understandable for the reader, we use the negative value of the ratio between total expenses and beds (and similarly for all the other variables included in the regression model).

Explanatory variables

To estimate the effect of the blended hybridised clinical-manager on hospital performance, we looked at the educational background of the CEO. First, we distinguished between CEOs with clinical educational background (essentially, all individuals with a degree in medicine) and those ones with a non-clinical background (CLIN_CEO). Second, among clinical CEOs we distinguished doctors with a clinical specialisation in PH (PH_CEO) from doctors with any other medical specialisation. Third, among CEOs with non-clinical background, we focused our attention in particular on CEOs with a degree in administrative sciences (Law/Political Science) (ADM_CEO), as these are traditionally the individuals that are given hospital managerial responsibility in the Italian SSN.

A number of control variables were included in the model. First, we looked at whether acting CEOs had previous professional experiences in the same role within healthcare organisations (BACK_CEO) (Fattore et al. 2013), assuming that this would have provided individuals with greater knowledge and ability to deal with the requirement of the role. We also considered the length of tenure of the CEO within the same organisation (TENURE), on the basis that longer tenure would yield a better understanding of the organisational resources and greater familiarity with other managers.

In terms of organisational characteristics, we distinguished hospitals in terms of their size with regard to the total number of beds available (SIZE) and case mix, as a proxy for the

complexity of care provided (CASEMIX). Following a similar line of reasoning, hospitals were differentiated according to the population age, determined by the mean age of the population served (POP_AGE). Older patients can potentially require more complex treatments and are more prone to multi-morbidity issues. Finally, hospitals were differentiated according to their status, by distinguishing general hospitals from teaching (TEACHHOSP) and research (RESHOSP) hospitals (Veronesi et al. 2015).

Analysis

We separately estimated three empirical models for each financial and non-financial performance indicator as dependent variables. The models employing the financial performance measures as dependent variables were estimated using data for a 3-year period (2008-2010). By contrast, the quality performance analyses were carried out for 2-year periods (2008-2009 for ‘APPROP’ and 2009-2010 for ‘LOS’). As the quality performance indicators were dichotomous variables, we employed a pooled logistic regression estimation technique. Conversely, because of the continuous nature of the financial performance proxies, we used pooled OLS regressions. In both cases we included year dummy variables in the models. We also estimated analogous specifications of the relevant regression model for each explanatory variable (i.e. CLIN_CEO, PH_CEO and ADM_CEO).

FINDINGS

Table 2 reports the descriptive statistics related to the variables employed in our analyses. Firstly, it can be seen that CEOs with clinical expertise were more likely to lead Italian public hospitals (59.4%) than those with non-clinical expertise (40.6%). Interestingly, PH doctors

entailed about the 29.9% of the CEOs’ sample. As far as previous experience in the role is concerned, 38.8 % of CEOs had already occupied this position in the past. Finally, CEO’s average tenure was around 3 years.

INSERT TABLE 2 HERE

Table 3 reports the Pearson bivariate correlations of the variables employed, which allows to check for possible multicollinearity. As a rule of thumb, a problem of multicollinearity subsists if the pair-wise correlation coefficients between two regressors is high, normally in excess of 0.8 (Gujarati 2004). As shown in Table 3, the coefficients for each of the independent and control variables in the regression models ranged from -0.708 to 0.552, hence below the threshold. We also tested for multicollinearity through Variance Inflation Factor analysis. All VIF values were within acceptable limits for the variables employed (<10) and, therefore, we did not exclude any variable.

INSERT TABLE 3 HERE

Tables 4 and 5 respectively show the results of the pooled logistic and the OLS regression analyses testing the effect of CEO expertise and specialisation on the quality of services provided and on the financial performance dimensions. Specifically, models (1) and (4) tested the effect of clinical CEO expertise on hospital performance. Models (2) and (5) investigated the effect of PH specialisation. Finally, models (3) and (6) assessed the effect on performance of CEOs with administrative background. Within these models, each performance indicator is individually regressed on the different explanatory variables. As a robustness test, we also ran

the regression models considering the continuous values of length of stay (LOS) and appropriateness (APPROP), yielding comparable results (APPENDIX A).

INSERT TABLES 4 AND 5 HERE

As reported in Table 4, specifications (1) and (4) of the regression models respectively highlighted a positive and highly significant influence of CEOs with a clinical background on the efficiency of care (LOS) ($\beta = 1.590$, $p < 0.01$) and on the surgical and medical appropriateness (APPROP) ($\beta = 0.888$, $p < 0.05$) factors. Consistent with earlier research (Sarto & Veronesi 2016), we find that hospitals run by clinical CEOs appeared to be better performers in terms of the quality of the service provided in comparison to those organisations led by non-clinicians. However, with regard to the financial performance dimension (see Table 5), clinical expertise seemed to have the opposite effect on the profitability and efficiency of the hospital. In particular, models (1) and (4) respectively suggested a negative and significant effect of a clinical CEO on the operating margin ($\beta = -0.035$, $p < 0.1$) and on the financial efficiency ($\beta = -17.163$, $p < 0.1$) factors. Thus, hospitals run by clinical CEOs appeared to underperform in terms of the financial performance dimension compared to those organizations led by non-clinical CEOs.

With respect to the PH specialisation of doctors and its effect on the quality of the service provided, the results of the regression models were more mixed. We found that the coefficient of the variable PH_CEO was highly significant and positively related to the dependent variable only for specification (2) of the model where clinical CEOs with PH specialisation appeared to have a positive effect on the efficiency of care (LOS) ($\beta = 1.066$, $p < 0.01$). This means that hospitals run by a PH_CEO were better performers in terms of length

of stay of patients compared to those organizations led by the other CEO types (clinical CEOs with a different specialisation or non-clinical CEOs). Conversely, PH specialisation of the CEO did not seem to generate the same effect on the appropriateness of the hospital care, as the sign of the coefficient was still positive but not statistically significant at the customary levels. With regard to the financial performance dimension, the negative effect of a clinical background of the CEO on the profitability and efficiency of hospital disappeared when the CEOs had a PH specialisation (see Table 5). Indeed, both specifications (2) and (5) of the regression model did not reveal significant coefficients for the variable PH_CEO. Thus, although hospitals run by “blended hybrids” were not, in statistical terms, financially better performers than the rest of the sample, neither were they underperformers, as in the case of hospitals run by clinical CEOs with a non-PH specialisation.

Finally, the findings related to the effect of CEOs with administrative background on the two performance dimensions show a rather discernible pattern. Specification (3) of the model (see Table 4) highlights a negative and statistically significant effect on the efficiency of care (LOS) ($\beta = -1.249$, $p < 0.01$), whereas the coefficient is negative but not significant in relation to the appropriateness of care (APPROP) (specification 6). On the other hand, specification (3) of the regression model in Table 5 shows a positive and significant effect of CEOs with an administrative background on the operating margin ratio. This CEO type did not, however, appear to have a statistically significant influence on the operational efficiency of the hospital.

As for the control variables, hospital size had a negative effect on the quality of the service provided both in terms of length of stay and appropriateness, although it did impact (positively) on efficiency. The proxy for operational complexity (case mix) had mixed implications, being negative for length of stay, but positive for appropriateness of care and

efficiency. Surprisingly, teaching and research statuses did not have any significant effect on the quality of care, while tenure also had a variable impact on our key dimensions of performance.

As a further robustness test, we sought to exclude the possibility that our findings were effected by endogeneity problems due to reverse causality. To do this, we re-ran the pooled regressions by using lag values of the independent variables employed (APPENDIX B). Here, the assumption is that CEOs would not be able to predict the hospital performance at time t from the information set available at time t - 1, thus suggesting that the performance (at time t) is not explained by the tendency of CEO with certain backgrounds to be appointed on high performing hospitals. The results of this robustness test were qualitatively similar to the ones reported for the main analysis. The results of the base line models were also confirmed when the regressions were re-run using industry-adjusted performance values (APPENDIX C).

DISCUSSION AND CONCLUSIONS

Our point of departure in this paper was the observation that professional manager hybrids are not an undifferentiated category, but must be understood as a continuum, with so-called blended hybrids (or organised professionals) representing a fuller and earlier integration of professional and management logics (Noordegraaf 2011, p.1015). This, in turn, raises questions about the relative impact of these different types of hybrid on performance outcomes. Focusing on the case of the Italian health system and the development of a medical management specialism (representing a more blended hybrid model), we sought to investigate this matter posing two questions: a) does the presence of PH doctors, as CEO’s of public hospitals, have a positive impact on performance, in terms of efficiency and quality

outcomes?; and b) how does this impact compare with CEOs with other kinds of human capital?

Concerning the first question, our results suggest that public hospitals with PH doctors as their CEOs did perform marginally better on one quality outcome measure - length of stay – but this did not apply either to the appropriateness of the hospital care or various financial outcomes. However, while this might imply a very weak impact of PH professional managers (our proxy for blended hybrids), such findings become more meaningful when looked at in comparison with other forms of CEO expertise (question two). Here our analysis shows that CEOs with a more traditional clinical background generally outperform PH doctors on quality outcomes, but do worse (having a statistically negative effect) when it comes to the profitability and efficiency of hospitals. As such, it becomes more meaningful to understand the impact of PH doctors with stronger management training and socialisation in *relative* terms, compared to the alternatives. While PH doctors in leadership roles do not improve financial outcomes, they do nevertheless appear to avoid some of the pitfalls associated with more conventional hybrids, with purely clinical backgrounds.

Returning to the main concerns of this paper, these results demonstrate that more blended forms of professional manager hybrids (PH doctors in this case) can have a *distinctive* influence on performance. What our data shows is that when compared with other types of hybrid with stronger clinical backgrounds, PH doctors in CEO roles are associated with satisfactory but unspectacular performance both in terms of financial and non-financial outcomes. This is especially true when compared to ‘classic’ hybrids (with mainly clinical backgrounds) and non-clinical administrators or managers (who, unsurprisingly, are associated with higher operating margins (see Table 5)). On the other hand, the contribution of PH doctors may also be viewed as a lower risk, avoiding the pitfalls of either low financial

or non-financial performance. In this regard, one might argue that PH doctors are most effective in balancing clinical and non-clinical concerns and striking a *middle path*, the primary benefit of which is to minimise under-performance rather than achieve high performance.

Such findings have a number of wider implications for theory, research and policy. Our first key contribution is to the growing literature on how professionals on the boards of public organisations shape performance (Sarto & Veronesi 2016). Our results are consistent with earlier studies, demonstrating the positive impact that professionals – in our case, clinicians – have on service quality outcomes (Goodall 2011; Veronesi et al. 2015). However, in addition to this, they also offer a more nuanced picture, highlighting the need to differentiate between the backgrounds of hybrid professional managers and how these backgrounds are significant for understanding the impact that these professionals can have on strategic decision making. In particular, the Italian experience suggests that prior management training and socialisation of professionals is important in this regard. Contrary to what has been argued elsewhere in the literature (see, for example, McGivern et al. 2015), exposure to this kind of training (as in the case of Italian PH doctors) does seem to have consequences for how hybrids perform their roles.

A further contribution is to debates about the consequences of deeper, blended forms of hybrid, professional manager roles. In some accounts these roles are viewed as going beyond just ‘pragmatic collaboration’ (Reay & Hinings 2009) between professional and management logics, but are illustrative of entirely new ways of working that are more appropriate to the changing demands facing professions (Noordegraaf 2011). To some extent, our findings suggest that blended hybrids may be more adept at balancing professional and managerial demands, especially with regard to financial concerns (see Noordegraaf 2015). However, as

we saw, this can be at the expense of achieving higher quality performance associated with more traditional hybrids (clinical CEOs in the Italian case). As such, by highlighting benefits *and* risks, our results underlie how deeper forms of hybridisation are unlikely to be transformational. Indeed, it is possible that blended hybrids (such as PH doctors) will encounter difficulties in the performance of management roles that are less apparent for other professionals. As noted earlier, these difficulties may stem from their more generalist professional training (reducing their insight into practice), their lower credibility and status.

Turning to policy implications, the findings reported here raise questions about whether further investments should be made in the development of specialist medical manager professions in Italy and elsewhere (Busari et al. 2011). On the one hand, it might be argued that the only marginal impact that PH doctors in CEO roles have on performance is a reason to question these investments. However, in practice much will depend on the expectations of different policy makers and stakeholders and what outcomes are most valued. While enhancing performance may be an objective in some contexts, in others the avoidance of risk associated with under-performance may be more salient.

When drawing these conclusions, it is important to note certain caveats and directions for future work. An obvious concern is the need for more longitudinal research to strengthen our conclusions about the assumed direction of causality – whether the human capital of CEOs impact on performance or vice-versa? Although the robustness tests we conducted increase our confidence in the assumed relationships, access to further years of data would be useful. Second, we clearly need to know more about the internal dynamics of the boards of Italian public hospitals to better understand *why* there is a relationship between different types of human capital (clinical, non-clinical and PH backgrounds) and performance. Although we can speculate about the ability, motivation and opportunities of hybrid professional managers

to influence strategic decisions, further research on this topic, focusing on how actors interact in context and leadership styles would be advantageous.

Lastly, we need to look beyond the Italian case to fully understand the nature and consequences of blended hybrid professional managers. Indeed, Italy may be distinctive in a number of respects. It has been noted, for example, that local and regional political networks play an important role in shaping the appointment of hospital managers and their ability to leverage resources (such as capital and HR investments) (Fattore et al. 2012). The association between public health and medical management specialisation in Italy may also be significant, given the low status of public health in most international rankings of medical specialisations (Norredam and Album 2007). Either way there is scope to extend this research to other contexts to secure a better understanding of how different patterns of hybrid professional management are emerging and their impact.

REFERENCES

Ackroyd, S., Kirkpatrick, I. & Walker, R.M., 2007. Public Management Reform in the Uk and Its Consequences for Professional Organization: a Comparative Analysis. *Public Administration*, 85(1), pp.9–26.

Appelbaum, E., 2000. *Manufacturing advantage: Why high-performance work systems pay off*, New York: Cornell University Press.

Battilana, J., 2011. The Enabling Role of Social Position in Diverging from the Institutional Status Quo: Evidence from the UK National Health Service. *Organization Science*, 22(4), pp.817–834.

Busari, J.O., Berkenbosch, L. & Brouns, J.W., 2011. Physicians as managers of health care delivery and the implications for postgraduate medical training: a literature review. *Teaching and learning in medicine*, 23(2), pp.186–96.

Croft, C., Currie, G. & Lockett, A., 2015. Broken “two-way windows”? An exploration of professional hybrids. *Public Administration*, 93(2), pp.380–394.

DeCoster, J., Iselin, A.-M.R. & Gallucci, M., 2009. A conceptual and empirical examination of justifications for dichotomization. *Psychological methods*, 14(4), pp.349–66.

Denis, J.L., Ferlie, E. & Van Gestel, N., 2015. Understanding hybridity in public organizations. *Public Administration*, 93(2), pp.273–289.

Dent, M. et al., 2016. *The changing world of professions and professionalism*, London: Routledge.

Exworthy, M. & Halford, S., 1999. Professionals and managers in a changing public sector: conflict, compromise and collaboration? In *Professionals and the New Managerialism in the Public Sector*. pp. 1–17.

Falcone, R.E. & Satiani, B., 2008. Physician as hospital chief executive officer. *Vascular and endovascular surgery*, 42(1), pp.88–94.

Fattore, G., Dubois, H.F.W. and Lapenta, A., 2012, Measuring New Public Management and Governance in Political Debate, *Public Administration Review*, 72, 2, 218–27.

Ford-Eickhoff, K., Plowman, D.A. & McDaniel, R.R., 2011. Hospital boards and hospital strategic focus: the impact of board involvement in strategic decision making. *Health care management review*, 36(2), pp.145–154.

Garavelli, E. et al., 2014. Education and training among Italian Postgraduate medical Schools in Public Health: a comparative analysis. *Annali di igiene : medicina preventiva e di comunità*, 26(5), pp.426–34.

Goodall, A., 2009. Highly cited leaders and the performance of research universities. *Research Policy*, 38(7), pp.1079–1092.

Goodall, A., 2011. Physician-leaders and hospital performance: is there an association? *Social science & medicine*, 73(4), pp.535–539.

Ham, C. et al., 2011. Doctors who become chief executives in the NHS: from keen amateurs to skilled professionals. *Journal of the Royal Society of Medicine*, 104(3), pp.113–9.

Haslam, S. A., & Van Dick, R. (2011). A social identity analysis of organizational well-being. *Social psychology and organizations*, 325-352.

Kippist, L. & Fitzgerald, A., 2009. Organisational professional conflict and hybrid clinician managers: The effects of dual roles in Australian health care organisations. *Journal of Health Organisation and Management*, 23(6), pp.642–655.

Kurunmäki, L., 2004. A hybrid profession—the acquisition of management accounting expertise by medical professionals. *Accounting, Organizations and Society*, 29(3–4), pp.327–347.

Larson, D., Chandler, M. & Forman, H., 2003. MD/MBA programs in the United States: evidence of a change in health care leadership. *Academic Medicine*, pp.335–341.

Larson, M.S., 1977. *The Rise of Professionalism: A Sociological Analysis.*, Berkeley: University of California Press.

Lega, F., 2008. The rise and fall(acy) of clinical directorates in Italy. *Health policy*, 85(2), pp.252–62.

MacCarrick, G.R., 2014. Professional Medical Leadership: A Relational Training Model. *Leadership in Health Services*, 27(4).

Martin, G.P. & Learmonth, M., 2012. A critical account of the rise and spread of “leadership”: The case of UK healthcare. *Social Science & Medicine*, 74(3), pp.281–288.

Mcgivern, G. et al., 2015. Hybrid Manager-Professionals’ Identity Work: the Maintenance and Hybridization of Medical Professionalism in Managerial Contexts. *Public Administration*, 93(2), pp.412–432.

Nante, N. et al., 2013. La scuola post-laurea di Sanità Pubblica senese. Quindici anni di

attività. *Medicina e Chirurgia*, 57, pp.2555–2563.

Noordegraaf, M., 2015. Hybrid Professionalism and Beyond: (New) Forms of Public Professionalism in Changing Organizational and Societal Contexts. *Journal of Professions and Organization*, 2(2), pp.1–20.

Noordegraaf, M., 2011. Remaking professionals? How associations and professional education connect professionalism and organizations. *Current Sociology*, 59(4), pp.465–488.

Noordegraaf, M. & Van Der Meulen, M., 2008. Professional Power Play: Organizing Management in Health Care. *Public Administration*, 86(4), pp.1055–1069.

Norredam, M. & Album, D., 2007. Prestige and its significance for medical specialties and diseases. *Scandinavian journal of public health*, 35(6), pp.655–661.

Numerato, D., Salvatore, D. & Fattore, G., 2012. The impact of management on medical professionalism: a review. *Sociology of health & illness*, 34(4), pp.626–44.

Nuti, S. et al., 2012. Assessment and improvement of the Italian healthcare system: first evidence from a pilot national performance evaluation system. *Journal of healthcare management*, 57(3), pp.182–98.

O’Reilly, D. & Reed, M., 2010. “Leaderism”: an Evolution of Managerialism in Uk Public Service Reform. *Public Administration*, 88(4), pp.960–978.

Pelissero, G., 2007. Tradizione e innovazione nel profilo professionale dell’igienista. *L’Ospedale*, 4, pp.20–23.

Reay, T. & Hinings, C., 2009. Managing the rivalry of competing institutional logics. *Organization Studies*, 30(6), pp.629–52.

Reed, M.I., 1996. Expert Power and Control in Late Modernity: An Empirical Review and Theoretical Synthesis. *Organization Studies*, 17(4), pp.573–597.

Romano, G. et al., 2014. I percorsi della formazione postlauream per la prevenzione, scuole

dl specializzazione, master, corsi dl alta formazione e perfezionamento. *Igarss 2014*, (1), pp.1–5.

Sartirana, M., Prenestini, A. & Lega, F., 2014. Medical management: hostage to its own history? The case of Italian clinical directors D. Ingo Bode and Professor Mike Dent, ed. *International Journal of Public Sector Management*, 27(5), pp.417–429.

Sarto, F. & Veronesi, G., 2016. Clinical leadership and hospital performance: assessing the evidence base. *BMC Health Services Research*, 16(S2), p.169.

Veronesi, G., Kirkpatrick, I. & Altanlar, A., 2015. Clinical Leadership and the Changing Governance of Public Hospitals: Implications for Patient Experience. *Public Administration*, Early View, pp.1–18.

Waring, J., 2014. Restratification, Hybridity and Professional Elites: Questions of Power, Identity and Relational Contingency at the Points of “Professional-Organisational Intersection.” *Sociology Compass*, 8(6), pp.688–704.

Waring, J. & Currie, G., 2009. Managing Expert Knowledge: Organizational Challenges and Managerial Futures for the UK Medical Profession. *Organization Studies*, 30(7), pp.755–778.

Weiner, B.J., Shortell, S.M. & Alexander, J., 1997. Promoting clinical involvement in hospital quality improvement efforts: the effects of top management, board, and physician leadership. *Health services research*, 32(4), pp.491–510.

Witman, Y. et al., 2010. Doctor in the lead: balancing between two worlds. *Organization*, 18(4), pp.477–495.

Xirasagar, S. & Samuels, M.E., 2006. Management Training of Physician Executives, Their Leadership Style, and Care Management Performance: An Empirical Study. *The American Journal Of Managed Care*, 12(2), pp.101–108.

Zhou, X., 2005. The Institutional Logic of Occupational Prestige Ranking:

Reconceptualization and Reanalyses. *American Journal of Sociology*, 111(1), pp.90–140.